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The Salamander as a Drug in Nicander's Writings

*by D. C. A. Hillman**

NICANDER'S second century B.C. poems, *Theriaca* and *Alexipharmaca*, as two colossal icebergs in the ocean of classical studies, are best admired at a distance. For the modern reader, who may not be able to distinguish henbane from hemlock, or a viper from an asp, Nicander's works viewed in detail are perceived as confusing examples of shamelessly flaunted erudition. Each contains what seems to be an unending list of trees, shrubs, insects, arachnids, reptiles, and amphibians. However, an examination of the flora and fauna found in Nicander's works provides an interesting and often entertaining perspective on the ancient world, and causes one to ask why Hellenistic Greeks feared the wasp or the centipede. Is the bite of a shrewmouse truly fatal? Is it possible that bull's blood is poisonous when drunk? Are cabbage and rue legitimate cures for fungal infections? To illustrate the benefit derived from scrutinizing Nicander's treatment of poisonous and medicinal substances, this note considers a single topic from these two ancient works by Nicander: the salamander.

In the *Alexipharmaca* Nicander warns his reader to avoid the "draught . . . of the sorcerer's lizard . . . which they call the salamander."[1] He then describes in remarkable detail the horrible symptoms that follow upon ingestion of the animal and finishes with the curatives appropriate to such a situation. Although the text is straightforward in its description of the poisonous effects of the salamander and the possible treatment for salamander poisoning, the modern reader is left with some questions: Did Greeks and Romans actually drink salamanders, and if so, why? Was it commonplace in antiquity to encounter a salamander in potable form, or was this a rarity to which Nicander referred in order to add yet another poison and antidote to his long list? The salamander can also be found in the *Theriaca*, where it is included in a list of animals that poison by means of biting and stinging.[2] Again, readers are warned to avoid a creature that is able to pass through fire unharmed. There are a number of difficulties in understanding these passages. Twice Nicander stated that the creature was able to pass through fire. It must be determined whether this is relevant to our understanding of the passages, and also whether the salamander was indeed made into a drink, and if so, for what reason. In addition, was there some truth to the claim that Nicander's salamander is toxic to humans? Such problems can be more fully explored by examining ancient sources other than Nicander, which make reference to the salamander.

In the literary tradition of antiquity, there

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are approximately ninety references to the salamander. Within these sources, there are two explanations for why this amphibian could not be burnt. In his *History of Animals*,[3] Aristotle states that the salamander is said to be able to pass through the fire unharmed. His *Generation of Animals*[4] adds the theoretical framework for this assertion: Because some animals belong to earth, air, and water, there must exist creatures that belong to the element of fire. The salamander is used as an example of such an animal. Pliny provides a second explanation for the origin of this belief. Although he clearly states that this belief is unfounded, he reveals that its origin can be found with the Magi.[5] In an earlier book of his *Natural History*, he argues that the salamander is able to extinguish fire by means of its "coldness."[6] Other authors are divided on the reliability of this notion.[7] Galen asserts that "The salamander, up to a point, is not injured by fire, but burns if it is placed in the flame for an extended period of time."[8] For Nicander, the fact that the salamander can escape from fire does not contribute to our understanding of its poisonous effects; instead, like Pliny, he uses this observation to make for more interesting reading—sensationalizing an encounter with a creature that has mythical qualities. Nicander uses well-known legends to "spice up" his epic poems that are more than just technical treatises.

Why does Nicander refer to salamander as a potable substance? Do medical authorities in antiquity help explain its use in a "draught?" Dioscorides listed salamander along with other drugs that shared the same properties: it was considered to have caustic and corrosive abilities, and was used in the treatment of what we now recognize as leprosy.[9] Other authors refer to the salamander in discussing the removal of unwanted hair, but do not indicate how the drug was prepared.[10] We do learn, however, that the ashes of a burnt salamander could be used as a component in a drug mixture.[11] It is hard to determine whether such a mixture, presumably used as a salve, would have been administered internally. It is hard to imagine that the ingestion of a salve would be common enough to merit lengthy discussion of the poisonous qualities of a salamander.

Nicander and others clearly refer to salamander being imbibed, if not simply ingested. Several medical authors follow Nicander in warning about the dangers of swallowing this creature.[12] Galen mentions that the salamander is added to mixtures of drugs in a process involving the boiling of the creature in oil.[13] If liquefied salamander can be found in the preparation of drugs, it is possible that Nicander is actually warning against the improper use of drugs containing salamander. If this is the case, there remains a further difficulty. Why do so many authors warn against its ingestion? Either Nicander was warning his audience about a prevalent drug that was misused on a regular basis, or he was not speaking of salamander as it was used in medicine. Indeed, it is more likely that Nicander was speaking of the salamander in nonmedical terms.

Aetius of Amida, in his *Iatricorum*, provides a key to understanding Nicander's text. The thirteenth book of his work, "On Animals that Bite and are Poisonous," contains an enlightening description of ancients encountering the salamander in food and drink:

> Many have perished when venomous animals fell into boiling water or food. And this happens most especially when one is traveling abroad and must make a meal in the countryside from local vegetation. Sometimes, when salamanders and caterpillars are warming themselves in the sun, they fall into the food being prepared. One must especially beware the small-seeded pine and the stone-pine, for there are deadly caterpillars in them. And so it was common for creatures such as salamanders and caterpillars to fall into the meal when it was boiled. Vipers, however, end up in the wine.[14]

Another example of swallowing wild creatures is found in the *Alexipharmaca*, where we find an episode involving the accidental ingestion of leeches.[15] Here Nicander speaks of people becoming ill after drinking water in which a leech happened to go unnoticed. It is likely that Nicander's "draught of salamander" is not a reference to a drug but the accidental ingestion of this creature in food and drink.

The question remains whether this amphibian would have been poisonous to an individual who was unfortunate enough to swallow it. To answer this, we must identify the species of salamander that Nicander was concerned with.[16] Dioscorides describes the poisonous salamander as sluggish and spotted.[17] We also know from the same text that the salamander contained "ulcerative" and "corrosive" properties.[18] This capacity

The ancient belief in the ability of the salamander to survive the effects of fire and heat contributed to its use as a symbol of pharmacy, primarily in Holland. Representations of salamanders often identified the premises of chemists in Holland, such as this one from the collection of the Medico-Pharmaceutical Museum of Amsterdam.

to irritate the skin may have been responsible for the drug's previously mentioned use as a depilatory. More importantly, from this reference we may conclude that the salamander referred to in ancient medical sources, and probably in Nicander as well, contained a substance that burned the skin. Although many salamanders are poisonous, the Fire Salamander of central and southern Europe most closely fits the aforementioned description. This ornately spotted amphibian contains a series of poison glands running along either side of its vertebral column. Its poisonous secretions are composed of alkaloids that are known to act as skin irritants.[19] In addition, the Fire Salamander prefers to live in moist forested areas, and is particularly fond of shaded areas such as holes or crevices.[20] It is indeed likely that one would encounter the Fire Salamander when gathering wood for a fire. If the creature were hiding in the wood, it is entirely possible that it would escape the notice of the cook and end up in the stew. And any salamander escaping altogether reinforced the myth of the creature's invulnerability to fire.

Notes and References

1. *Nicander. The Poems and Poetical Fragments*, ed. A. S. F. Gow and A. F. Scholfield (Cambridge: Cambridge University Press, 1953). As translated by Gow and Schofield (lines 537-540), the passage begins as follows: "But if hurt come from a draught, hard to cure, of the sorcerer's Lizard, slippery-skinned and utterly reckless, which they call the Salamander, and which not even a fierce flame can harm." The translation of "sorcerer's lizard" from the Greek may be more accurately rendered as "poisonous lizard" according to the context of the passage. That is, the passage contains no other references to magic.
2. *Theriaca*, lines 818-821. It is interesting that the salamander is not a drink here but one of several poisonous creatures including scorpions, wasps, and bees. This would imply that the salamander's bite is the concern of the author.
3. *Historia Animalium*, 552b, in Pliny, *Natural History*, H. Rackham and W. H. S. Jones, 10 vols., *Loeb Classical Library*. (Cambridge: Harvard University Press, 1938).
4. This reference (Aristotle, *Generation of Animals*, A. L. Peck, *Loeb Classical Library* (Cambridge: Harvard University Press, 19XX), 761b), however, is cause for concern because 737a of the same treatise clearly states that fire does not generate any animal. In addition, in *Meteorlogica* 382a, Artistotle states that animals can only live on land or in the water. This would seem to contradict Aristotle's own notion that certain animals "belong" to fire.
5. *Naturalis Historia* (n. 3), 29.74. Note that Pliny is adamantly opposed to this view on the basis of scientific investigation. According the Pliny, if this belief were true it would have already been demonstrated.
6. *Naturalis Historia* (n. 3), 10.188: It is strange that Pliny includes in his description of the salamander a natural or scientific explanation for an ability that he later argues does not exist (*Naturalis Historia*, 29.74).
7. In support of the salamander's ability to resist fire, see Aetius Amidenus, *Iatricorum Libri, Aetii Amideni Libri Medicinales*, CMG 8.2 ed. A. Oliveri (Leipzig: Teubner, 1935), 13.56: "The salamander is an animal similar to the spotted lizard. It is swifter than the poisonous lizard. The animal walks through the burning fire without suffering. The flame is divided and avoided by the salamander. If it remains in the flame for a certain period of time, when its coldness is consumed and its moist mucus is removed, it burns. They say that it possesses a heaviness which is opposed to and quenches the fire." Eutecnius, 63.817-827, simply restates Nicander. Against the

salamander's ability to resist fire see Dioscorides, *De Materia Medica, Pedanii Dioscuridis Anazarbei de Materia Medica Libri Quinque*, ed. M. Wellman, 3 vols. (Berlin: Weidmann, 1958), 2.62: "The salamander is a type of sluggish lizard and has many spots. It is falsely believed not to burn." Galen, *Claudii Galeni Opera Omni*, ed. C. G. Kuhn, 22 vols. (Leipzig: Knobloch, 1821), 12.742.

8. *De Temperamentis* 1.674 (Kuhn, n. 7).
9. Dioscorides, *De Materia Medica* (n. 7),2.62.
10. For additional references on the removal of hair using salamander see Martial's *Epigrams* 2.64; Petronius, *Satyricon*, chap. 107 sect. 15; Pliny, *Naturalis Hisoria* 10.188, 29.116; Galen, *De Compositione Medicamentorum Secundum Locos* 12.742.
11. Galen, *DCM* (n. 10) 12.742; Paul of Aegina, *Epitomea Medicae* 7.3.18; Pliny, *Naturalis Historia* 29.116.
12. For imbibing and ingesting salamander see Scribonius Largus, *Compositiones* 187; Aetus, *Iatrocorum* 13.56; Dioscorides, *Euporista Vel De Simplicibus Medicinis* 2.159, *De Venenis Eorumque Praecautione it Medicatione* 4.1.
13. Galen, *DCM* (n. 10),12.456: "Mixing Nitron and Amorge (lees of wine) with them, there are even harsher forms due to the addition of sea urchins and salamander, boiling them in oil."
14. Aetius, *Iatricorum* (n. 7),13.11. This section contains the title "As many things as submit to venemous creatures kill the same, and concerning poisonous animals falling into food and drink." It is important to note that this title directly indicates that animals were able to fall into food.
15. Nicander, *Alexipharmaca* 495-510.
16. Assuming, of course, that the Greek "salamander" is what modern biologists refer to as a salamander.
17. Dioscorides, *De Materia Medica* 2.62. Note that the Greek term can be translated as "spotted" or "many-colored." Many salamanders of Europe are multi-colored, but spots are characteristic of the common Fire Salamander.
18. Dioscorides uses terms for "ulcerative" and for "corrosive." It is significant that both terms imply a burning of the skin or other tissue.
19. For information on the poison glands of Fire Salamanders, see Richard Griffiths, *Newts and Salamanders of Europe* (New York: Harcourt Brace and Co., 1996), pp. 2-4, 30-33.
20. For the habitat of the Fire Salamander, see Griffiths, *Newts and Salamanders* (n. 19), 155-156.

Unsolved Pharmaceutical Mysteries

by William H. Helfand

If a picture is worth a thousand words, then a picture where one knows what one is looking at is certainly worth more. These two photographs (below, and on the facing page) need identification, for like many older images found in attics and albums, those who knew what they were seeing did not think it necessary to share their information with future viewers.

The group of men and women members of the D A C Pharmaceutical Club date from be-